

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1-17. (canceled)

18. (currently amended) Process for controlling the supply of high pressure (HP) gasoline of a set of injectors connected to a common high pressure chamber, called a "common rail" (C) in a direct fuel injection circuit, called DFI, by a high pressure pump (P), by comprising steps of:

acting on ~~the~~ a low pressure (LP) supply of said pump (P) by means of a slide electrovalve (E), controlled by a ~~the~~ computer ~~managing the operation of the motor, said electrovalve (E) comprising~~

allowing an internal leakage from ~~the~~ an upstream low pressure, arriving at the electrovalve (E), toward a ~~the~~ downstream low pressure, toward the pump (P), ~~characterized by the fact that there is provided and~~

providing in said electrovalve (E) a high pressure (HP) leakage of the gasoline ~~ethylene~~, located in the common rail (C), toward the upstream low pressure.

19. (currently amended) Process according to claim 18, ~~consisting in connecting the chamber (64) of~~ wherein the electrovalve (E) comprises a chamber (64)[[,]] receiving the upstream low pressure, the chamber being connected to the common rail (C) by means serving as a non-return valve of calibrated passage, [[:]] so that under certain conditions of operation of the motor, the gasoline located at low pressure in the common rail can be returned to the low pressure upstream inlet.

20. (currently amended) Device for practicing the process according to claim 19, of the type comprising:

[[a]] low pressure gasoline supplied by a low pressure pump
(B) acting in a reservoir (R);

a high pressure pump (P); ~~supplying~~

a common rail (C) supplied by the high pressure pump; and

an electrovalve (E) regulating the supply of the low pressure gasoline to said pump (P),

an upstream low pressure inlet connecting the pump (B) to the electrovalve;

a downstream low pressure conduit connecting the electrovalve to the high pressure pump (P);

said electrovalve (E) ~~being an electrovalve (40) with a~~
valve comprising:

a slide (43), this latter sliding slidably disposed in a ~~skirt jacket~~ (42) so as to cause the ~~inlet of the~~ upstream low

pressure inlet (23) to communicate with the downstream low pressure conduit (22a) supplying the pump (P) by means of a throat (46) provided in the slide ~~drawer~~ (43)[[,]];

a chamber (64) into which the upstream low pressure inlet opens;

an orifice (62) connecting the chamber (64) to the common rail by a channel (63);

a deformable cage (60, 61) disposed in the chamber so as to be able to controllably rest against the seat so as to controllably open or close the orifice, calibrated openings allowing some flow to the channel (63) even when the deformable cage is positioned to close the orifice;

a spring (44) disposed in the deformable cage to apply force to the slide;

a motor (45) disposed to move the slide against the spring force;

wherein the slide, jacket, and throat are constructed and arranged so that a leakage flow ~~being arranged~~ occurs between the upstream low pressure inlet (23) and the downstream low pressure conduit (22a) by means of play between the skirt (42) and the ~~drawer~~ slide (43),

~~characterized by the fact that the drawer (43) is moved by a motor (45) against the force of a spring (44), this latter being disposed in a deformable cage (60/61), disposed in a chamber (64) into which opens the inlet channel (43) of the upstream low~~

~~pressure, the upper portion (60) of this cage closing (or opening) an orifice (62), of the chamber (64), connected by a channel (63) to the common rail (C), this closure means being moreover provided with calibrated openings (65); such that,~~

wherein, as a function of the demand on the motor, a communication can be established between the reservoir (R) and the common rail (C) by the ~~channels~~ upstream low pressure inlet (23) and channel (63) through at least one of the opening orifice (62) and ~~the calibrated passage openings (65).~~

21. (currently amended) Device according to claim 20, ~~in which the opening (62) comprises~~ further comprising a seat (65) against which rests ~~the~~ a movable portion (60) of the deformable cage (60/61); said seat (65) being traversed by at least one or several of the calibrated conduits openings so as to ensure through said seat (65) a calibrated permanent leakage.

22. (currently amended) Device according to claim 20, in which the ~~drawer~~ slide (43) of the electrovalve (E) is traversed by a piercing passage (48).

23. (currently amended) Device according to claim 21, in which in normal operation of the motor, the low pressure gasoline provided by the low pressure pump (B) passes through the electrovalve by passing through the throat (46), which is ~~more or~~

~~less~~ opened by the movement of the ~~drawer~~ slide (43) moved by the motor (45) against the spring (44) which applies ~~the~~ a portion (60) of the cage against the ~~opening~~ orifice (62).

24. (currently amended) Device according to claim 20, in which when the motor is stopped, ~~the~~ residual high pressure prevailing in the common rail (C) flows toward the reservoir (R) through the calibrated openings ~~passages~~ (65), the chamber (64) and the ~~channel~~ upstream low pressure inlet (23).

25. (currently amended) Device according to claim 20, in which when the motor acts as a motor brake, the injectors are closed, but the pump (P) is still driven and pumping the leakage flow from the upstream low pressure to the downstream low pressure, the high pressure increases in the common rail and presses back the cage (60) by opening the ~~opening~~ orifice (62) so as to be returned to the reservoir (R).

26. (currently amended) Device according to claim 20, in which when the motor turns idly, ~~the~~ excess ~~of~~ high pressure gasoline provided by the pump (P) is returned to the reservoir (R) through the channel (63), the ~~opening~~ orifice (62) and the ~~channel~~ upstream low pressure inlet (23).

27-33. (canceled).